

What is claimed is:

1 A mobile communication control system comprising a server and a plurality of routers,

wherein the server comprises:

5 an address manager configured to manage a first address of a destination mobile terminal associated with a second address of the destination mobile terminal; and

an instructor configured to instruct a source router connected to a source mobile terminal via a radio circuit to  
10 store the first address of the destination mobile terminal associated with the second address of the destination mobile terminal;

wherein the source router comprises:

a first address memory configured to store the first  
15 address of the destination mobile terminal associated with the second address of the destination mobile terminal, in accordance with the instruction from the server,

an address converter configured to convert the first address of the destination mobile terminal which is included  
20 in a packet received from the source mobile terminal as a destination address, to the second address of the destination mobile terminal which is associated with the first address of the destination mobile terminal in the first address memory; and

25 a routing processor configured to route the received packet to a destination router connected to the destination mobile terminal via a radio circuit, in accordance with the converted destination address;

and wherein the destination router comprises:

a second address memory configured to store the first address of the destination mobile terminal associated with the second address of the destination mobile terminal;

an address converter configured to convert the second  
5 address of the destination mobile terminal which is included in the received packet as a destination address, to the first address of the destination mobile terminal which is associated with the second address of the destination mobile terminal in the second address memory; and

10 a packet transferring processor configured to transfer the received packet to the destination mobile terminal, in accordance with the converted destination address.

2 The mobile communication control system according to  
15 claim 1,

wherein the destination router further comprises a selection notifier configured to select the second address of the destination mobile terminal which is associated with the first address of the destination mobile terminal in the second  
20 memory, and to notify the selected second address of the destination mobile terminal to the server, when the destination mobile terminal moves into a predetermined area, or when the destination mobile terminal changes to an active state;

and wherein the address manager of the server manages the  
25 notified second address of the destination mobile terminal associated with the first address of the destination mobile terminal.

3. The mobile communication control system according to

claim 1, wherein

the source router further comprises an inquirer configured to inquire as to the second address of the destination mobile terminal of the server, when the first address memory does not store the second address of the destination mobile terminal associated with the first address of the destination mobile terminal which is included in the packet received from the source mobile terminal as a destination address; and

the instructor of the server instructs the source router to store the first address of the destination mobile terminal associated with the second address of the destination mobile terminal, in accordance with the inquiry from the source router.

4. The mobile communication control system according to claim 1, wherein the address manager of the server updates the first address of the destination mobile terminal and the second address of the destination mobile terminal which are associated with each other, in accordance with a movement of the destination mobile terminal or the change of state of the destination mobile terminal.

5. The mobile communication control system according to claim 1, wherein the instructor of the server instructs the router which is not in a route of the packet from the source mobile terminal to the destination mobile terminal, to delete the managed first address of the destination mobile terminal and the managed second address of the destination mobile terminal.

6. The mobile communication control system according to claim 1, wherein the address converter of the source router or the destination router distinguishes the first address of the destination mobile terminal from the second address of the destination mobile terminal, in accordance with at least one decision bit in the packet.

7. A mobile communication control method comprising the steps of:

transmitting a packet including a first address of a destination mobile terminal as a destination address, in a source mobile terminal;

instructing a source router connected to the source mobile terminal via a radio circuit to store the first address of the destination mobile terminal associated with a second address of the destination mobile terminal, in a server;

storing the first address of the destination mobile terminal associated with the second address of the destination mobile terminal, in accordance with the instruction from the server, in the source router,

converting the first address of the destination mobile terminal which is included in the packet received from the source mobile terminal as a destination address, to the second address of the destination mobile terminal which is associated with the first address of the destination mobile terminal, in the source router;

routing the received packet to a destination router connected to the destination mobile terminal via a radio circuit,

in accordance with the converted destination address, in the source router;

converting the second address of the destination mobile terminal which is included in the received packet as a destination address, to the first address of the destination mobile terminal which is associated with the second address of the destination mobile terminal, in the destination router; and transferring the received packet to the destination mobile terminal, in accordance with the converted destination address.

8. A server used in a mobile communication network for transferring a packet from a source mobile terminal to a destination mobile terminal via a plurality of routers, the server comprising:

an address manager configured to manage a first address of the destination mobile terminal associated with a second address of the destination mobile terminal; and

an instructor configured to instruct a source router connected to the source mobile terminal via a radio circuit to store the first address of the destination mobile terminal associated with the second address of the destination mobile terminal.

9 The server according to claim 8, wherein the address manager updates the first address of the destination mobile terminal and the second address of the destination mobile terminal which are associated with each other, in accordance with a movement of the destination mobile terminal or the change

of state of the destination mobile terminal.

10. The server according to claim 8, wherein the instructor instructs the router which is not in a route of the packet from the source mobile terminal to the destination mobile terminal, to delete the managed first address of the destination mobile terminal and the managed second address of the destination mobile terminal.

11. A router connected to a source mobile terminal comprising:

an inquirer configured to inquire as to a second address of a destination mobile terminal of a server, when a first address memory does not store the second address of the destination mobile terminal associated with a first address of the destination mobile terminal which is included in a packet received from the source mobile terminal as a destination address;

the first address memory configured to store the first address of the destination mobile terminal associated with the second address of the destination mobile terminal, in accordance with an instruction from the server;

an address converter configured to convert the first address of the destination mobile terminal which is included in the packet received from the source mobile terminal as a destination address, to the second address of the destination mobile terminal which is associated with the first address of the destination mobile terminal in the first address memory; and

a routing processor configured to route the received packet to a destination router connected to the destination mobile terminal via a radio circuit, in accordance with the converted destination address.

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12. The router according to claim 11, wherein the address converter distinguishes the first address of the destination mobile terminal from the second address of the destination mobile terminal, in accordance with at least one decision bit in the packet.

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13. A router connected to a destination mobile terminal comprising:

a selection notifier configured to select a second address of the destination mobile terminal which is associated with a first address of the destination mobile terminal in a second memory, and to notify the selected second address of the destination mobile terminal to a server, when the destination mobile terminal moves into a predetermined area, or when the destination mobile terminal has changed to an active state.

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the second address memory configured to store the first address of the destination mobile terminal associated with the second address of the destination mobile terminal,

an address converter configured to convert the second address of the destination mobile terminal which is included in a received packet as a destination address, to the first address of the destination mobile terminal which is associated with the second address of the destination mobile terminal in the second address memory; and

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a packet transferring processor configured to transfer the received packet to the destination mobile terminal, in accordance with the converted destination address.

5           14. The router according to claim 13, wherein the address converter distinguishes the first address of the destination mobile terminal from the second address of the destination mobile terminal, in accordance with at least one decision bit in the packet.

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15           15. A data structure of a packet for transfer from a source mobile terminal to a destination mobile terminal via a plurality of routers, wherein

            the most significant bit of an IPv6 address in the packet  
15      functions as a decision bit for distinguishing a first address of the destination mobile terminal from the second address of the destination mobile terminal,

            when a source router connected to the source mobile terminal via a radio circuit converts the first address of the destination mobile terminal which is included in the packet  
20      received from the source mobile terminal as a destination address, to the second address of the destination mobile terminal which is associated with the first address of the destination mobile terminal, and routes the received packet to  
25      a destination router connected to the destination mobile terminal via a radio circuit, in accordance with the converted destination address,

            and when the destination router converts the second address of the destination mobile terminal which is included



in the received packet as a destination address, to the first address of the destination mobile terminal which is associated with the second address of the destination mobile terminal, and transfers the received packet to the destination mobile terminal, in accordance with the converted destination address.

16. A data structure of a packet for transfer from a source mobile terminal to a destination mobile terminal via a plurality of routers, wherein

10 any bit in the range of the 33rd bit to 64th bit of an IPv6 address in the packet functions as a decision bit for distinguishing a first address of the destination mobile terminal from the second address of the destination mobile terminal,

15 when a source router connected to the source mobile terminal via a radio circuit converts the first address of the destination mobile terminal which is included in the packet received from the source mobile terminal as a destination address, to the second address of the destination mobile terminal which is associated with the first address of the destination mobile terminal, and routes the received packet to a destination router connected to the destination mobile terminal via a radio circuit, in accordance with the converted destination address,

25 and when the destination router converts the second address of the destination mobile terminal which is included in the received packet as a destination address, to the first address of the destination mobile terminal which is associated with the second address of the destination mobile terminal, and

transfers the received packet to the destination mobile terminal, in accordance with the converted destination address.

17. The mobile communication control system to claim 1,  
5 wherein

the address converter of the source router converts a first address of the source mobile terminal which is included in a packet received from the source mobile terminal as a source address, to a second address of the source mobile terminal which  
10 is associated with the first address of the source mobile terminal; and

the address converter of the destination router converts the second address of the source mobile terminal which is included in the received packet as a source address, to the first  
15 address of the source mobile terminal which is associated with the second address of the source mobile terminal.

18. The router according to claim 11, wherein the address converter converts a first address of the source mobile terminal which is included in the packet received from the source mobile  
20 terminal as a source address, to a second address of the destination mobile terminal which is associated with the first address of the destination mobile terminal.

25 19. The router according to claim 13, wherein the address converter converts a second address of the source mobile terminal which is included in a received packet as a source address, to a first address of the source mobile terminal which is associated with the second address of the destination mobile

terminal